1   What is claimed is:

2

3   1.   A method comprising:

4   initializing a processing system according to predetermined basic input/output

5   system (BIOS) settings for the processing system;

6   booting an operating system (OS) on the processing system; and

7   providing a virtual runtime interface that allows a user to modify the BIOS

8   settings for the processing system after the OS has been booted.

9

10 2.   A method according to claim 1, further comprising:

11   receiving user input data that requests invocation of the virtual runtime interface;

12 and

13   automatically providing the virtual runtime interface, in response to receiving the

14 user input data.

15

16 3.   A method according to claim 1, further comprising:

17   receiving user input data through the virtual runtime interface, wherein the user

18 input data specifies a modified BIOS setting; and

19   saving the modified BIOS setting to be implemented upon a subsequent

20 initialization of the processing system.

21

22 4.   A method according to claim 1, wherein the operation of providing a virtual

23 runtime interface comprises:

24   transitioning the processing system from an OS context to a system

25 management mode (SMM) context;

26   determining whether an amount of time spent in the SMM context approaches an

27 SMM time limit; and

28   if the amount of time spent in the SMM context approaches the SMM time limit,

29 automatically transitioning from the SMM context back to the OS context.

30

1   5.   A method according to claim 4, wherein the operation of providing a virtual

2   runtime interface comprises:

3   providing a BIOS setup interface that appears persistent to the user by

4   automatically interleaving two or more SMM contexts with two or more OS contexts.

5

6   6.   A method according to claim 4, further comprising:

7   saving state information from the SMM context before transitioning from the SMM

8   context back to the OS context;

9   after transitioning back to the OS context, determining whether a configuration

10   session has been completed; and

11   if the configuration session has not been completed, automatically transitioning

12   from the OS context back to the SMM context.

13

14   7.   A method according to claim 6, wherein the operation of determining whether a

15   configuration session has been completed comprises:

16   receiving input data from a watchdog timer for the virtual runtime interface when

17   the processing system is in the OS context.

18

19

1   8.   An apparatus comprising:

2   a machine accessible medium; and

3   instructions encoded in the machine accessible medium, wherein the

4   instructions, when executed by a processing system, cause the processing system to

5   perform operations comprising:

6   providing a virtual runtime interface after the processing system has booted to an

7   operating system (OS), wherein the virtual runtime interface allows a user to modify

8   basic input/output system (BIOS) settings for the processing system, and wherein the

9   virtual runtime interface provides a graphical user interface (GUI) that accepts user

10   input data.

11

12   9.   An apparatus according to claim 8, wherein the operation of providing a virtual

13   runtime interface comprises:

14   providing a BIOS setup interface that accepts alphanumeric input data.

15

16   10.   An apparatus according to claim 8, wherein the operation of providing a virtual

17   runtime interface comprises:

18   providing a BIOS setup interface that accepts input data from a pointing device.

19

20

1   11.   An apparatus comprising:

2   a machine accessible medium; and

3   instructions encoded in the machine accessible medium, wherein the

4   instructions, when executed by a processing system, cause the processing system to

5   perform operations comprising:

6   providing a virtual runtime interface after the processing system has booted to an

7   operating system (OS), wherein the virtual runtime interface allows a user to modify

8   basic input/output system (BIOS) settings for the processing system;

9   receiving user input data through the virtual runtime interface, wherein the user

10   input data specifies a modified BIOS setting; and

11   saving the modified BIOS setting to be implemented upon a subsequent

12   initialization of the processing system.

13

14   12.   An apparatus according to claim 11, wherein the operations performed by the

15   instructions further comprise:

16   automatically providing the virtual runtime interface, in response to user input

17   data that requests invocation of the virtual runtime interface.

18

19

1   13.   An apparatus comprising:

2   a machine accessible medium; and

3   instructions encoded in the machine accessible medium, wherein the

4   instructions, when executed by a processing system, cause the processing system to

5   perform operations comprising:

6   detecting a BIOS configuration trigger event after the processing system has

7   booted to an operating system (OS); and

8   in response to detecting the BIOS configuration trigger event, automatically

9   providing a virtual runtime interface that allows a user to modify basic input/output

10   system (BIOS) settings for the processing system.

11

12   14.   An apparatus according to claim 13, wherein the instructions cause the

13   processing system to provide the virtual runtime interface by:

14   transitioning the processing system from an OS context to a system

15   management mode (SMM) context;

16   determining whether an amount of time spent in the SMM context approaches an

17   SMM time limit; and

18   if the amount of time spent in the SMM context approaches the SMM time limit,

19   automatically transitioning from the SMM context back to the OS context.

20

21   15.   An apparatus according to claim 14, wherein the instructions cause the

22   processing system to provide the virtual runtime interface by:

23   saving state information from the SMM context before transitioning from the SMM

24   context back to the OS context;

25   after transitioning back to the OS context, determining whether a configuration

26   session has been completed; and

27   if the configuration session has not been completed, automatically transitioning

28   from the OS context back to the SMM context.

29

1   16.   An apparatus according to claim 15, wherein the operation of determining

2   whether a configuration session has been completed comprises:

3   receiving input data from a watchdog timer for the virtual runtime interface when

4   the processing system is in the OS context.

5

6   17.   An apparatus according to claim 13, wherein the instructions cause the

7   processing system to provide a user interface that appears persistent to the user by

8   automatically interleaving two or more SMM contexts with two or more OS contexts.

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10

1   18.   A processing system comprising:

2   a processor;

3   memory communicatively coupled to the processor;

4   basic input/output system (BIOS) settings stored in the memory; and

5   instructions stored in the memory, wherein the instructions, when executed by

6   the processor, cause the processing system to perform operations comprising:

7   detecting a BIOS configuration trigger event after the processing system has

8   booted to an operating system (OS); and

9   in response to detecting the BIOS configuration trigger event, automatically

10   providing a virtual runtime interface that allows a user to modify the BIOS settings for

11   the processing system.

12

13   19.   A processing system according to claim 18, wherein the memory comprises:

14   a first memory device that contains the BIOS settings; and

15   a second memory device that contains the instructions.

16

17   20.   A processing system according to claim 18, wherein the processing system

18   provides the virtual runtime interface by:

19   transitioning from an OS context to a system management mode (SMM) context;

20   determining whether an amount of time spent in the SMM context approaches an

21   SMM time limit; and

22   if the amount of time spent in the SMM context approaches the SMM time limit,

23   automatically transitioning from the SMM context back to the OS context.

24

1   21.   A processing system according to claim 20, wherein the processing system

2   provides the virtual runtime interface by:

3   saving state information from the SMM context before transitioning from the SMM

4   context back to the OS context;

5   after transitioning back to the OS context, determining whether a configuration

6   session has been completed; and

7   if the configuration session has not been completed, automatically transitioning

8   from the OS context back to the SMM context.

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